

## CLAIMS

1. A method for optimal Short Message Service (SMS) encoding in a wireless communications device having SMS capabilities, the method comprising:

- 5           evaluating a wireless device resource encoding requirement for an SMS message in the wireless device;
- selecting an optimal encoding format for the SMS message in response to evaluating the wireless device resource encoding requirement for an SMS message in the wireless device;
- 10          encoding the SMS message in response to selecting the optimal encoding format; and,
- storing the encoded SMS message in wireless device memory.

2. The method of claim 1 wherein evaluating a wireless
- 15   device resource encoding requirement for an SMS message includes identifying an encoding format available in the wireless device and usable for encoding the SMS message.

3. The method of claim 2 wherein identifying an encoding
- 20   format available in the wireless device and usable for encoding the SMS message includes determining the number of bits needed to represent characters in the usable format.

4. The method of claim 3 wherein evaluating a wireless
- 25   device resource encoding requirement for an SMS message in the wireless

device includes determining a memory usage requirement of the SMS message.

5           5.       The method of claim 4 wherein selecting an optimal  
encoding format for the SMS message in response to evaluating the  
wireless device resource encoding requirement for an SMS message in the  
wireless device includes selecting the encoding format that encodes the  
SMS message with a minimum memory usage as the optimal encoding  
format.

10           6.       The method of claim 5 wherein selecting the optimal  
encoding format includes selecting seven-bit ASCII as a default optimal  
encoding format.

15           7.       The method of claim 5 wherein evaluating a wireless  
device resource encoding requirement for an SMS message in the wireless  
device includes evaluating an English-language SMS message;

              wherein identifying an encoding format available in the  
wireless device and usable for encoding the SMS message includes:

20           identifying seven-bit ASCII, ISO Latin 1, and Unicode  
formats as usable; and,

              determining the number of bits needed to represent  
characters in the seven-bit ASCII, ISO Latin 1, and Unicode formats;  
and,

wherein selecting the encoding format that encodes the SMS message with a minimum memory usage as the optimal encoding format includes selecting seven-bit ASCII.

5           8.     The method of claim 5 further comprising:  
              inputting the SMS message to a Mobile Origination enabled  
wireless device via a user interface; and,  
              transmitting the stored SMS message.

10           9.     The method of claim 5 further comprising:  
              receiving the SMS message via a transceiver; and,  
              presenting the stored SMS message on a user interface.

10           10.    A method for optimal Short Message Service (SMS)  
15   encoding in a wireless communications device having SMS capabilities,  
the method comprising:  
              evaluating a wireless device resource encoding requirement  
for an SMS message in the wireless device;  
              identifying an encoding format available in the wireless  
20   device and usable for encoding the SMS message;  
              determining the number of bits needed to represent  
characters in the usable formats;  
              determining a memory usage requirement of the SMS  
message;

selecting the encoding format that encodes the SMS message  
with a minimum memory usage as the optimal encoding format;

encoding the SMS message in response to selecting the  
optimal encoding format; and,

5 storing the encoded SMS message in wireless device memory.

11. A system for optimal Short Message Service (SMS)  
encoding in a wireless communications device having SMS capabilities,  
the system comprising:

10 an optimizing subsystem with an input to accept an SMS  
message, an input to accept an evaluation control signal, and an output to  
supply an optimizing signal responsive to the SMS message encoding  
requirements; and,

an encoding subsystem with an input to accept the SMS  
15 message, an input to accept the optimizing signal, and an output to supply  
the SMS message in a format responsive to the optimizing signal.

12. The system of claim 11 wherein the evaluation control  
signal identifies encoding formats available in the wireless device and  
20 available encoding format parameters including the number of bits needed  
to represent characters.

13. The system of claim 12 wherein the optimizing  
subsystem evaluates the SMS message to identify available encoding  
25 formats usable for encoding the characters, wherein the optimizing

subsystem determines a memory usage requirement, wherein the  
optimizing subsystem selects as the optimal encoding format a usable  
format with a minimum memory usage, and wherein the optimizing  
subsystem supplies the identity of the optimal encoding format in the  
5 optimizing signal.

14. The system of claim 13 wherein the encoding  
subsystem encodes the SMS message in the optimal encoding format and  
supplies the encoded SMS message at an output.

15. The system of claim 14 wherein a memory circuit has  
an input to accept the encoded SMS message for storage and an output to  
supply the stored SMS message.

16. The system of claim 15 wherein the wireless device is  
Mobile Origination enabled and the optimizing subsystem accepts the  
SMS message from a user interface; and,  
wherein a transceiver has an input to accept the stored SMS  
message from memory for airlink transmission.

17. The system of claim 15 wherein the transceiver accepts  
an airlink communication including an SMS message;  
wherein the optimizing subsystem accepts the SMS message  
from a transceiver; and,

wherein a user interface has an input to accept the stored SMS message for presentation.

18. The system of claim 15 wherein the encoding  
5 subsystem uses seven-bit ASCII as a default optimal encoding format.